

ABSTRACT OF THE DISCLOSURE

Provided are an apparatus and a method of driving a high-efficiency plasma display panel for quickly eliminating a free-wheeling current, generated due to the parasitic effect in an energy recovery circuit, thereby improving energy recovery efficiency. The sustain-discharge driving device of a high-efficiency plasma display panel (PDP) includes a sustain-discharge switching unit, which connects charging and discharging paths of an energy recovery unit to the PDP according to a sustain-discharge sequence, and includes an energy recovery unit which, according to an energy recovery sequence, discharges energy of the PDP to an energy accumulation device through a resonance path while in discharging mode, charges the PDP with the energy accumulated in the energy accumulation device through a resonance path while in charging mode, and forms a closed circuit in which the voltage difference between both ends of an inductor is greater than a predetermined value so as to eliminate a free-wheeling current, which is generated in the inductor of the resonance path due to a parasitic effect, during mode transition.